

ADDITIONAL FEE:

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R E M A R K S

The Office Action issued November 16, 2004 has been received and its contents have been carefully considered.

To assist in understanding the structure of the in plane switching (IPS) liquid crystal display (LCD) according to the present invention, applicant submits (attached hereto) three sheets of drawings:

(1) A new sheet with Fig. 1(c) showing multiple pixel regions of the IPS LCD.

(2) A replacement sheet for Figs. 4(a) and 4(b), with cross-section lines A-A' and B-B' in Fig. 4(a).

(3) A new sheet with Figs. 4(c) and 4(d) showing the cross-sectional views taken along the lines A-A' and B-B'; respectively, in Fig. 4(a).

Since new Fig. 1(c) merely shows multiple regions having a structure identical to that in Fig. 1(a); and since new Figs. 4(c) and 4(d) illustrate the well-known structure

of an IPS LCD, these figures do not present an issue of "new matter".

Claims 1-6 have been carefully reviewed and amended, where necessary, to overcome the rejection under 35 USC §112, second paragraph. Care has been taken to recite the location and cooperative structural relationships and connections between the claimed elements. Furthermore, the term "pixel" has been changed to "pixel region" throughout the claims.

In claim 2, the objectionable language "according to the present invention" has been amended to read "according to claim 1".

The specification of this application has also been amended to place it in idiomatic English and to provide correspondence with the amended language of the claims. For example, the term "pixel" has been amended to read "pixel region".

All of the claims of this application, namely, claims 1-6, stand rejected under 35 USC §102(e) as being anticipated by Matsuura et al. This rejection is respectfully traversed because:

(a) In Matsuura et al., a cut is formed by laser irradiation, whereas with the present invention, a cut is formed without irradiating with a laser; and

(b) With Matsuura et al., a CS circuit (supplemental capacitor electrode 32) is not disposed in opposition to a pad (contact 26), so that a storage capacitor is not formed by the CS circuit and the pad, as is the case with the present invention.

In short, Matsuura et al. provide a structurally different configuration than that of the present invention.

In Matsuura et al., the contact 26 makes substantial contact to the pixel electrode 28 which is formed substantially over the whole pixel region. When voltage is applied to the pixel electrode, voltage is applied to the liquid crystal. In the present invention, the pixel electrode connects to the capacitor storage circuit through a pad and a portion of the pixel electrode extends over the charging before making contact with the liquid crystal.

The configuration in the present invention provides an improvement in access to the pixel electrode and a reduction in cut failure. The configuration in Matsuura et al. requires two connections to be cut in order to achieve an


acceptable level of cut failure. The first cut is between the contact and the TFT side and the second is between the contact and the pixel electrode side. "When both portions are cut, the corresponding pixel can usually be darkened even in the case of one cut failure, and the probability of the occurrence of the bright point due to the cut failure can be sufficiently lowered."

The configuration disclosed and claimed herein provides access to the pixel electrode in a target area where the pixel electrode can be severed by a single cut. Cut failure is reduced because only the pixel electrode is cut. "Unlike in the conventional method in which aluminum members are short-circuited, the pixel electrode 16 [made of conductive thin film such as indium tin oxide] can be cut by a lower-energy laser beam." (Specification, sentence bridging pages 6-7). By reducing the laser energy other complications such as meltdown of the aluminum members, heat transfer to the liquid crystal, and generation of bubbles in and around the aperture are eliminated. (pages 2-3 and page 8).

In conclusion, therefore, claims 1-6, as amended, are believed to distinguish patentably over Matsuura et al. Since the specification, claims and drawings have been

amended to overcome the informalities noted by the Examiner,  
this application is believed to be in condition for  
immediate allowance. A formal Notice of Allowance is  
accordingly respectfully solicited.

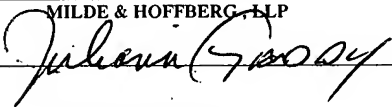
Respectfully submitted,

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